

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Arthur E. Quaid, et al.	)	Docket No.:	4204.38-1
		)		
Serial No.:	TBD	)	Examiner:	TBD
		)		
Filed:	Herewith	)	Art Unit:	TBD
		)		
For:	Guidance System and Method for	)		
	Surgical Procedures with Improved	)		
	Feedback	)		

## INFORMATION DISCLOSURE STATEMENT

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Applicants enclose the attached PTO-1449 form citing references to be considered and cited in the examination for above-identified patent application filed herewith. Copies of the references are enclosed for the convenience of the Examiner.

Applicants believe no fee is due. However, the Director is authorized to charge any fees or credit any overpayments to Deposit Account 13-4900.

Respectfully submitted,

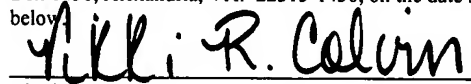


Anand Gupta  
Reg. No. 48,219

Date: 7/16/03  
MUNSCH HARDT KOPF & HARR, P.C.  
4000 Fountain Place  
1445 Ross Avenue  
Dallas, Texas 75202-2790  
Telephone: 214-855-7519  
Facsimile: 214-855-7584

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Vikki R. Colvin

Date

7-16-03

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				Application Number	TBD
				Filing Date	07/16/2003
				First Named Inventor	Arthur E. Quaid, et al.
				Art Unit	TBD
				Examiner Name	TBD
Sheet	1	of	5	Attorney Docket Number	4204.38-1

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	AA	HO, S.C., et al., "Robot Assisted Knee Surgery," Institute of Electrical and Electronics Engineers Engineering in Medicine and Biology, May/June 1995, pp. 292-300.	
	BB	ABOVITZ, Rony, "Digital Surgery: The Future of Medicine and Human-Robot Symbiotic Interaction," Industrial Robot An International Journal, Volume 28, No. 5, 2001, pp.401-405.	
	CC	LEESER, Karl, "Computer-Assisted Teach and Play: Novel User-Friendly Robot Teach Mode Using Gravity Compensation and Backdrivability," Robotics International, Fifth World Conference on Robotics Research, September 27-29, 1994, 10 pages.	
	DD	QUAID, Arthur E., et al., "Haptic Information Displays for Computer-Assisted Surgery," Proceedings of 2002 Institute of Electrical and Electronics Engineers International Conference on Robotics & Automation held in Washington, D.C. on May, 2002, pp. 2092-2097.	
	EE	SAYERS, Craig P., et al., "An Operator Interface for Teleprogramming Employing Synthetic Fixtures," to appear in Presence, Special Issue on Networked Virtual Environments and Teleoperation, June, 1994, pp. 1-27.	
	FF	QUAID, Arthur E., et al., "FGS WAM: First Cadaver Trial," Z-Kat, Inc. Confidential Material, September 28, 2001, pp. 1-7.	
	GG	QUAID, Arthur E., et al., "FGS WAM: Integration of Fluorotactic Guidance with the Whole-Arm Manipulator," Z-Kat, Inc. Confidential Material, December 28, 2000, pp. 1-6.	
	HH	TOWNSEND, William T., et al., "Teleoperator Slave-WAM Design Methodology," Industrial Robot, Volume 26, Number 3, 1999, pp. 167-177.	
	II	ROSENBERG, Louis B., "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance in Telepresence Tasks," dissertation to Department of Mechanical Engineering and the Committee on Graduate Studies of Stanford University, August, 1994, 229 pages.	
	JJ	MOORE, Carl A., et al., "Cobot Implementation of 3D Virtual Surfaces," proceedings of the 2002 Institute of Electrical and Electronics Engineers International Conference on Robotics & Automation, May, 2002, pp. 3242-3247.	

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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	KK	LEESER, Karl, et al., "Control and Exploitation of Kinematic Redundancy in Torque-Controllable Manipulators via Multiple-Jacobian Superposition," to the International Conf. on Field & Service Robotics, Dec. 8-10, 1997, 7 pages.	
	LL	MATSUOKA, Yoky, et al., "Design of Life-Size Haptic Environments," Experimental Robotics VII, 2001, pp. 461-470.	
	MM	COLGATE, J. Edward, et al., "Cobots: Robots for Collaboration with Human Operators," proceedings of International Mechanical Engineering Congress & Exhibition, DSC-Volume 58, 1996, pp. 433-439.	
	NN	TOGNETTI, Lawrence Joseph, "Actuator Design for a Passive Haptic Display," Georgia Institute of Technology, June, 1999, 33 pages.	
	OO	SCHNEIDER, O., et al., "Synergistic Robotic Assistance to Cardiac Procedures," presented to Computer Assisted Radiology and Surgery on June 23-26, 1999, 5 pages.	
	PP	OTMANE, S., et al., "Active Virtual Guides as an Apparatus for Augmented Reality Based Telemanipulation System on the Internet," presented at Institute of Electrical and Electronics Engineers Computer Society 33rd Annual Simulation Symposium ANSS 2000, held April 16-20, 2000, pp. 185-191.	
	QQ	PARK, Shinsuk, et al., "Virtual Fixtures for Robotic Cardiac Surgery," presented October 14-17, 2001, Netherlands, 2 pages.	
	RR	BETTINI, A., et al., "Vision Assisted Control for Manipulation Using Virtual Fixtures," proceedings of the 2001 Institute of Electrical and Electronics Engineers International Conference on Intelligent Robots and Systems, October 29-November 3, 2001, pp. 1171-1176.	
	QQ	BETTINI, A., et al., "Vision Assisted Control for Manipulation Using Virtual Fixtures: Experiments at Macro and Micro Scales," proceedings of 2002 Institute of Electrical and Electronics Engineers International Conference on Robotics & Automation, May, 2002, pp. 3354-3361.	

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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First Named Inventor	Arthur E. Quaid, et al.
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Examiner Name	TBD
Attorney Docket Number	4204.38-1

Sheet

3

of

5

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	A	World Wide Web, <a href="http://www.acrobot.co.uk/home.html">http://www.acrobot.co.uk/home.html</a> , "The Acrobot Company Limited - Precision Surgical Systems," printed on 07/10/2002, 1 page.	
	B	World Wide Web, <a href="http://www.acrobot.co.uk/background.html">http://www.acrobot.co.uk/background.html</a> , "The Acrobot Company Limited - Background," printed on 07/10/2002, 1 page.	
	C	World Wide Web, <a href="http://www.acrobot.co.uk/products.html">http://www.acrobot.co.uk/products.html</a> , "The Acrobot Company Limited - Products," printed on 07/10/2002, pp. 1-6.	
	D	World Wide Web, <a href="http://www.acrobot.co.uk/meetings.html">http://www.acrobot.co.uk/meetings.html</a> , "The Acrobot Company Limited - Meetings and Publications," printed on 07/10/2002, pp. 1-3.	
	E	Press Release, "The Acrobot Company Wins Best Surgical Innovation Award," Acrobot Precision Surgical Systems, May 24, 2002, 1 page.	
	F	Sensible Technologies, Inc., "FREEFORM Feel the Difference", 2001, 4 pages.	
	G	Sensible Technologies, Inc., "FreeForm Modeling - Technical Features," 2003, 2 pages.	
	H	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/hapticmaster.htm">http://www.fcs-cs.com/robotics/content/hapticmaster.htm</a> , "HapticMASTER", printed on 06/12/2003, 1 page.	
	I	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/endeffectors.htm">http://www.fcs-cs.com/robotics/content/endeffectors.htm</a> , "End effectors," printed on 06/12/2003, 1 page.	
	J	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/software.htm">http://www.fcs-cs.com/robotics/content/software.htm</a> , "Software," printed on 06/12/2003, 1 page.	

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Sheet	4	of	5	Attorney Docket Number	4204.38-1

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	K	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/research.htm">http://www.fcs-cs.com/robotics/content/research.htm</a> , "Research," printed on 06/12/2003, 1 page.	
	L	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/rehabilitation.htm">http://www.fcs-cs.com/robotics/content/rehabilitation.htm</a> , "Rehabilitation," printed on 06/12/2003, 1 page.	
	M	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/simulation.htm">http://www.fcs-cs.com/robotics/content/simulation.htm</a> , "Simulation & Training," printed on 06/12/2003, 1 page.	
	N	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/reality.htm">http://www.fcs-cs.com/robotics/content/reality.htm</a> , "Virtual Reality," printed on 06/12/2003, 1 page.	
	O	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/design.htm">http://www.fcs-cs.com/robotics/content/design.htm</a> , "Virtual Design, Assembly & Maintenance," printed on 06/12/2003, 1 page.	
	P	World Wide Web, <a href="http://www.fcs-cs.com/robotics/content/assistance.htm">http://www.fcs-cs.com/robotics/content/assistance.htm</a> , "Surgical Assistance," printed on 06/12/2003, 1 page.	
	Q	World Wide Web, <a href="http://www.merl.com/projects/surgSim99/">http://www.merl.com/projects/surgSim99/</a> , "Knee Arthroscopy Simulation," printed on 06/12/2003, 2 pages.	
	R	World Wide Web, <a href="http://haptics.me.jhu.edu/r_kine.html">http://haptics.me.jhu.edu/r_kine.html</a> , "Robot Design and Kinematics," printed on 06/12/2003, 2 pages.	
	S	World Wide Web, <a href="http://haptics.me.jhu.edu/r_hapt.html">http://haptics.me.jhu.edu/r_hapt.html</a> , "Haptic Interfaces and Virtual Environments," printed on 06/12/2003, 2 pages.	

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet	5	of	5
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Application Number	TBD
Filing Date	07/16/2003
First Named Inventor	Arthur E. Quaid, et al.
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	4204.38-1

## U. S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

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		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
	AD	WO 02/060653 A2	08/08/2002	The Acrobot Company		

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